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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,962	12/31/2003	Chandrika Govardhan	A2039-701210	2164

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EXAMINER	
KIM, ALEXANDER D	
ART UNIT	PAPER NUMBER
1656	

NOTIFICATION DATE	DELIVERY MODE
04/13/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/749,962	GOVARDHAN ET AL.	
	Examiner	Art Unit	
	ALEXANDER D. KIM	1656	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 October 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *4,7-10,17-22 and 60-80* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4,7-10,17-22 and 60-80* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *02/20/2009,01/28/2009,06/20/2008,06/20/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Application Status

1. In response to the previous Office action, a non-Final rejection (mailed on 12/26/2007), Applicants filed a response and amendment received on 10/24/2008. Said amendment cancelled Claims 1-3, 5-6, 11-16 and 23-59; amended Claims 4, 7-9, 17-18, 20 and 34-65; and added new Claims 66-80.

Claims 4, 7-10, 17-22 and 60-80 are pending in the instant office action and will be examined herein.

Withdrawn-Claims Objections

2. The previous objections of Claims 62, 64 and 65 are withdrawn by virtue of Applicants' amendment.

Maintained-Double Patenting

3. The previous provisional rejection of Claim 4 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 4, 7, 9 and 10 of copending Application No. 11/169,956 (US 2006/0008532) is maintained.

Applicants defer addressing this rejection because neither application has issued as a patent and no conflicting claims have been patented.

Applicants' arguments have been fully considered but are not deemed persuasive to withdraw instant rejection for the following reasons. Because neither application have been patented and both are still pending, the instant rejection is

provisional and will be held in abeyance until such time as a full non-provisional decision can be rendered.

Withdrawn-Claim Rejections - 35 USC § 102

4. The previous rejection of Claims 4, 7-10, 17, 19, 22 and 60-65 are rejected under 35 U.S.C. 102(b) as being anticipated by Sorensen et al. (1998, US Patent 5,849,700) is withdrawn by virtue of Applicants' amendment (i.e., adding limitation of "comprising polyarginine and hGH" wherein the polyamine and hGH are two separate entities).

Withdrawn-Claim Rejections - 35 USC § 103

5. The previous rejection of Claims 4, 7-10, 17-22 and 60-65 under 35 U.S.C. 103(a) as being unpatentable over Sorensen et al. (1998, US Patent 5,849,700) as evidenced by DeFelippis et al. (1998, J. Pharm. Sci., vol. 87, pages 170-176) is withdrawn by virtue of Applicants' amendment (i.e., adding limitation of "comprising polyarginine and hGH" wherein the polyamine and hGH are two separate entities).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 4, 7-10, 17-22 and 60-80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sorensen et al. (1998, US Patent 5,849,700 - cited previously) in view of Singh (US Patent 5,788,959, Aug. 4, 1998) and DeFelippis et al. (1998, J. Pharm. Sci., vol. 87, pages 170-176, as cited previously).

Sorensen et al. teach a pharmaceutical formulation comprising a crystal of human growth hormone (hGH, 1.13 mg/ml in §10, line 23) (see Abstract and Example 4 in §13); wherein the “Human growth hormone consists of 191 amino acids" (see column 1, lines 20-21).

Sorensen et al. do not teach a composition having a polyarginine as part of the hGH crystal.

Singh teach a drug delivery device comprising "solution of a negatively-charged water-soluble polymer solution and a positively-charged water-soluble polymer" (i.e., a molecule encompassed by the instant recitation of "a cation"; such as polyarginine which has + charge(s) in normal physiological pH) in the presence of a pharmaceutically active ingredient (see Claim 1); wherein the positively-charged water-soluble polymer is polyarginine (see Claim 6) and the pharmaceutically active ingredient is human growth hormone (see Claim 11) which is used for the sustained release of a pharmaceutically active ingredient (see §1, lines 5-6). Also, Sorensen et al. disclose that "animal growth hormone may be stabilized with various stabilizers to give decreased formation of insolubles and preservation of the soluble activity in aqueous environments" (see bottom of §2); wherein the stabilizer includes "polyarginine" (see §3, line 11).

Sorensen et al. and Singh do not teach the limitation of an excipient, e.g., protamine, (Claims 20-21) and/or said excipient having a molar ratio of hGH: excipient of 1:10 to 1:0.125 (Claim 18).

DeFelippis et al. disclose the protamine suspension of LysPro (a human insulin analogue) having an “8:1 molar ratio” (equivalent to 1:0.125) of LysPro to protamine (see bottom of left column, page 173 for pharmaceutical preparations of insulin.

Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to make a pharmaceutical composition comprising the hGH crystal of Sorensen et al. by adding polyarginine as a stabilizer with a reasonable expectation of success that the formulation would co-crystallize or said crystal could be soaked with the polyarginine. One would have been motivated to add a polyamine to the human growth hormone crystal of Sorensen et al. as taught by Singh who teach the polyarginine allows sustained release of a pharmaceutically active ingredient "over a prolonged period of time" (see §2, line 34). The recited crystal characterization of a release profile in Claims 7-9 are inherent characteristics of the pharmaceutical composition comprising the polyamine and the human growth hormone crystal of Sorensen et al. Also, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include hGH of Sorensen et al. to a protamine suspension (e.g. 1:0.125 ratio as taught by DeFelippis et al) with reasonable expectation of success because the protamine is the most commonly used intermediate-acting suspension according to DeFelippis et al. (see bottom of left column, page 170). One would have been motivated to include protamine into said

hGH crystalline suspension since the protamine excipient prolong a pharmaceutical composition in patients and increase the duration of its action (see top of right column, page 170 of DeFelippis et al.) Thus, the invention taken as a whole is *prima facie* obvious.

It is noted that Claims 60, 61 and 63 (Claims 69, 70, 72, 77, 78, 80 dependent therefrom) are product by process claims. The factors to be considered for a product-by-process are summarized in MPEP 2113. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." See In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985), In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983) and Ex parte Gray, 10 USPQ2d 1922 (Bd. Pat. App. & Inter. 1989).

Conclusion

7. Claims 4, 7-10, 17-22 and 60-80 are not allowed for the reasons identified in the numbered sections of this Office action. Applicants must respond to the objections/rejections in each of the numbered section in this Office action to be fully responsive in prosecution.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXANDER D. KIM whose telephone number is (571)272-5266. The examiner can normally be reached on 11AM-7:30PM.
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jon Weber can be reached on (571) 272-0925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alexander D Kim/
Examiner, Art Unit 1656

/SUZANNE M. NOAKES/
Primary Examiner, Art Unit 1656